AMENDMENTS TO THE CLAIMS

1. (previously presented) A process for the preparation of organically modified aerogels with permanently hydrophobic surface groups, comprising:

a. preparing a lyogel, wherein the lyogel is a silicate-type hydrogel, by bringing an aqueous water glass solution to a pH value ≤ 3 with the aid of an acidic ion-exchanged resin or an inorganic acid to produce silicic acid and, via the addition of a base, polycondensing the silicic acid to give a SiO_2 gel;

b. introducing the lyogel into a reactor;

c. washing the lyogel introduced into the reactor in step b) essentially free of water with an organic solvent;

d. surface-silylating the lyogel obtained in step c) with a surface-silylating agent to produce a surface-silylated lyogel; and

e. drying the surface-silylated lyogel obtained in step d) to obtain an aerogel,

wherein the surface-silylating agent in step d) comprises a disiloxane of formula I

$$R_3Si\text{-}O\text{-}SiR_3 \quad (I)$$

wherein the residues R, independently of one another, identically or differently, signify in each case a hydrogen atom or a nonreactive organic residue that is linear, branched, cyclic, saturated or unsaturated, or aromatic or heteroaromatic.

2-5. (cancelled)

6. (previously presented) A process in accordance with claim 1, characterized by addition of IR turbidity-promoting agents.

7. (previously presented) A process in accordance with claim 1, characterized by addition of fibers.

8. (previously presented) A process in accordance with claim 1, wherein the lyogel obtained in step a) is aged before it is washed in step c).

9. (previously presented) A process in accordance with claim 1 wherein the lyogel in step c) is washed until the water content of the lyogel is $\leq$ 5 wt%.

10. (previously presented) A process in accordance with claim 1 wherein the organic solvent in step c) comprises aliphatic or aromatic hydrocarbon.

11. (previously presented) A process in accordance with claim 1 wherein the surface-silylating agent in step d) comprises symmetrical disiloxane.

12. (previously presented) A process in accordance with claim 1 wherein all the residues R in the disiloxane are identical.

13. (previously presented) A process in accordance with claim 1 wherein the surface-silylating agent in step d) is hexamethyldisiloxane.

14. (previously presented) A process in accordance with claim 1 wherein the surface-silylating in step d) is carried out in a solvent.

15. (previously presented) A process in accordance with claim 1 wherein the surface-silylating in step d) is carried out in the presence of a catalyst.

16. (previously presented) A process in accordance with claim 1 wherein the surface-silylating in step d) is carried out in the presence of catalytic quantities of trimethylchlorosilane.

17. (previously presented) A process in accordance with claim 1 wherein, prior to step e), the surface-silylated lyogel is washed with a protic or aprotic solvent.

18. (previously presented) A process in accordance with claim 1 wherein step e) comprises subcritically drying the surface-silylated lygoel.

19. (previously presented) A process for the preparation of organically modified aerogels with permanently hydrophobic surface groups, comprising;

a. introducing a lyogel into a reactor;
b. washing the lyogel introduced into the reactor in step a) essentially free of water with an organic solvent;
c. surface-silylating the lyogel obtained in step b) with a surface-silylating agent to produce a surface-silylated lyogel; and
d. drying the surface-silylated lyogel obtained in step c) to obtain an aerogel,

wherein the surface-silylating agent in step c) comprises a disiloxane of formula I

$$R_3Si\text{-}O\text{-}SiR_3 \quad (I)$$

wherein the residues R, independently of one another, identically or differently, signify in each case a hydrogen atom or a nonreactive organic residue that is linear, branched, cyclic, saturated or unsaturated, or aromatic or heteroaromatic, and wherein, prior to step c), the lyogel is washed with a solution of an orthosilicate capable of bringing about condensation, of formula $R^1_{4-n}Si\text{-}(OR^2)_n$ wherein n = 2 through 4 and R^1 and R^2, independently of one another, are hydrogen atoms, linear or branched C_1-C_4 alkyl residues, cyclohexyl residues or phenyl residues.

20. (currently amended) A process in accordance with claim ~~4~~ 1 wherein an inorganic acid is used to bring the aqueous water glass solution to a pH value of ≤ 3, and the lyogel is washed essentially free from electrolytes with water.

21. (previously presented) A process in accordance with claim 10, wherein the organic solvent ins step c) is selected from aliphatic alcohols, ethers, esters, and ketones.

22. (previously presented) A process in accordance with claim 15 wherein the catalyst comprises an acid.

23 (previously presented) A process in accordance with claim 19 wherein the orthosilicate is selected from alkyl orthosilicate and aryl orthosilicate.

24. (previously presented) A process in accordance with claim 1, wherein, prior to step d), the lyogel is washed with aqueous silicic acid solution.